

CLAIMS

1. A contents distributing apparatus, comprising
a data output device for outputting encoded data, and
a transmitting device for transmitting the encoded data
outputted from the data output device, wherein:

- 5 the data output device outputs data encoded by
hierarchical encoding as the encoded data; and
 the transmitting device transmits at least a part of data
of at least one layer among the data encoded by the hierarchical
encoding.

2. The contents distributing apparatus as claimed in
claim 1, wherein:

- the data output device outputs the data encoded by the
hierarchical encoding by separating it to respective encoded
5 data of each layer; and
 the transmitting device transmits each of the encoded
data individually by each layer.

3. The contents distributing apparatus as claimed in
claim 1, wherein the transmitting device transmits at least a
part of referred-information encoded data of at least one layer
among the data encoded by the hierarchical encoding.

4. The contents distributing apparatus as claimed in
claim 1, wherein the transmitting device transmits, among the
data encoded by the hierarchical encoding: a) at least a part
of encoded data of one layer; and b) at least a part of
5 referred-information encoded data of at least one layer among
remaining layers.

5. The contents distributing apparatus as claimed in
claim 1, wherein the transmitting device transmits, among the
data encoded by the hierarchical encoding: a) at least a part
of referred-information encoded data of one layer; and b) at
5 least a part of encoded data of at least one layer among remaining
layers.

6. The contents distributing apparatus as claimed in any
one of claims 1 - 5, wherein

the transmitting device comprises a transmission
managing unit, wherein

5 the transmission managing unit controls quality and
stability and/or confidentiality of distribution contents on
the contents distributing apparatus side through controlling
at least one of: number of the encoded data to be transmitted;
hierarchy of the encoded data; distribution target of a cipher
10 key; encryption method; and degree of encryption.

7. The contents distributing apparatus as claimed in claim 6, wherein, when performing data transmission of a plurality of pieces of encoded data with a time difference provided theretwixt, the transmission managing unit changes
5 a compression rate of following encoded data with respect to a compression rate of preceding encoded data with the time difference.

8. The contents distributing apparatus as claimed in claim 7, wherein the transmission managing unit selects the compression rate in accordance with a distribution rate and/or condition of a transmission line.

9. The contents distributing apparatus as claimed in any one of claims 6 - 8, wherein the transmission managing unit selects whether or not to transmit at least a part of the encoded
5 data in accordance with the distribution rate and/or the condition of the transmission line.

10. The contents distributing apparatus as claimed in any one of claims 1 - 9, wherein the transmitting device performs data transmission including encoded data of layers higher than hierarchy of the data to be transmitted.

11. The contents distributing apparatus as claimed in any

one of claims 6 - 10, wherein the transmission managing unit controls the quality and stability of the distribution contents on a contents distributing side through controlling informing 5 target of session information of a session by which the encoded data is transmitted.

12. A contents receiving apparatus, comprising:

a device for receiving encoded data transmitted by a plurality of sessions;

5 a device for receiving the encoded data received by the receiving device, and discriminating and separating individual encoded data units therefrom; and

a reconstruction device which extracts encoded data received without a transmission error and a fault from the discriminated and separated encoded data, and reconstructs and 10 outputs encoded data from the extracted encoded data.

13. The contents receiving apparatus as claimed in claim 12, wherein, when reconstructing the encoded data, the reconstruction device judges duplication of the encoded data from identifiers given to encoded data transmission units.

14. The contents receiving apparatus as claimed in claim 12, wherein the reconstruction device judges a compression rate and/or hierarchy of the encoded data from at least one of:

- a) an encoded data receiving session determined in advance;
- 5 b) encoded data identifying information determined in advance, which is given to the encoded data transmission unit;
- c) an encoded data receiving session informed by call connection processing; and
- e) the encoded data identifying information which is given to
- 10 the encoded data transmission unit and informed by the call connection processing.

15. The contents receiving apparatus as claimed in any one of claims 12 - 14, comprising a report transmitting unit for transmitting a receiving state report to inform condition of a transmission line.

16. A contents transmitting/receiving system, comprising a contents distributing apparatus, a contents receiving apparatus, and a communication network for connecting the contents distributing apparatus and the contents receiving

5 apparatus, wherein:

the contents distributing apparatus comprises
a data output device for outputting encoded data, and
a transmitting device for transmitting at least a part
of data of at least one layer among the data encoded by the
10 hierarchical encoding outputted from the data output device;
and

the contents receiving apparatus comprises
a device for receiving encoded data transmitted by a
plurality of sessions;

15 a device for receiving the encoded data received by the
receiving device, and discriminating and separating individual
encoded data units therefrom; and
a reconstruction device which extracts encoded data
received without a transmission error and a fault from the
20 discriminated and separated encoded data, and reconstructs and
outputs encoded data from the extracted encoded data.

17. A contents distributing method, comprising the steps
of:

an output step of outputting encoded data; and
a transmission step of transmitting the encoded data
5 outputted in the output step, wherein
data encoded by hierarchical encoding is outputted as the
encoded data in the output step, and
at least a part of data of at least one layer among the
data encoded by the hierarchical encoding is transmitted in the
10 transmission step.

18. The contents distributing method as claimed in claim
17, wherein

in the output step, the data encoded by the hierarchical

encoding is separated to respective encoded data of each layer

5 to be outputted; and

in the transmission step, each of the encoded data is transmitted by each layer.

19. The contents distributing method as claimed in claim 17, wherein, in the transmission step, there is transmitted at least a part of referred-information encoded data of at least one layer among the data encoded by the hierarchical encoding.

20. The contents distributing method as claimed in claim 17, wherein, in the transmission step, among the data encoded by the hierarchical encoding, there is transmitted: a) at least a part of encoded data of a first layer; and b) at least a part 5 of referred-information encoded data of at least one layer among remaining layers.

21. The contents distributing method as claimed in claim 17, wherein, in the transmission step, among the data encoded by the hierarchical encoding, there is transmitted: a) at least a part of referred-information encoded data of a first layer; 5 and b) at least a part of encoded data of at least one layer among remaining layers.

22. The contents distributing method as claimed in any

one of claims 17 - 21, wherein quality and stability and/or confidentiality of distribution contents is controlled on the contents distributing apparatus side through controlling, on
5 the contents distributing side, number of the encoded data to be transmitted, hierarchy of the encoded data, distribution target of a cipher key and/or encryption method and/or degree of encryption.

23. The contents distributing method as claimed in claim 22, wherein, when performing data transmission of a plurality of pieces of encoded data with a time difference provided therebetween, a compression rate of following encoded data is
5 changed with respect to a compression rate of preceding encoded data with the time difference.

24. The contents distributing method as claimed in claim 23, wherein the compression rate is selected in accordance with a distribution rate and/or condition of a transmission line.

25. The contents distributing method as claimed in any one of claims 17 - 24, data transmission is performed including encoded data of layers higher than hierarchy of the data to be transmitted.

26. The contents distributing method as claimed in any

one of claims 17 - 25, wherein the quality and stability of the distribution contents is controlled on a contents distributing side through controlling informing target of session information of a session by which the encoded data is transmitted.

27. The contents distributing method as claimed in claim 17, wherein the output step comprises at least one of the steps of:

- (a) an input step of first to N-th encoded data;
- 5 (b) an input step of encoded data, and a generating step of the first to N-th encoded data from data of at least one layer among the encoded data inputted in the input step;
- (c) an input step of a first encoded data, and a generating step of second to N-th encoded data from data of at least one layer 10 of the first encoded data inputted in the input step;
- (d) an encoding step of encoding an inputted signal into the first to N-th encoded data; and
- (e) an encoding step of encoding the inputted signal into the first encoded data, and a generating step of the second to N-th 15 encoded data from data of at least one layer of the first encoded data inputted in the input step.

28. The contents distributing method as claimed in claim 27, wherein, (N+1)-th encoded data is outputted in addition to

the N-th encoded data.

29. The contents distributing method as claimed in claim 28, wherein identifiers for identifying data are given to the first to (N+1)-th encoded data.

30. The contents distributing method as claimed in claim 28 or 29, wherein each of the first to (N+1)-th encoded data is transmitted by a different session.

31. The contents distributing method as claimed in claim 28 or 29, wherein the first to (N+1)-th encoded data are multiplexed to be transmitted.

32. The contents distributing method as claimed in claim 28 or 29, wherein, among the first to (N+1)-th encoded data, at least two pieces of encoded data are multiplexed, and the multiplexed data and remaining encoded data without 5 multiplexing are transmitted, respectively, by different sessions.

33. The contents distributing method as claimed in any one of claims 27 - 32, wherein a contents distributing side controls an informing target of session information of a session by which the encoded data is transmitted.

34. The contents distributing method as claimed in any one of claims 28 - 33, wherein the first to (N+1)-th encoded data are distributed with a time difference provided therebetween.

35. The contents distributing method as claimed in claim 34, wherein the time difference is set in accordance with condition of a transmission line and/or an encoding compression rate and/or a distribution rate and/or a rule determined in advance.

36. A contents receiving method, comprising the steps of:
a receiving step of receiving encoded data transmitted by a plurality of sessions;
a step of receiving the encoded data received in the receiving step, and discriminating and separating individual encoded data units therefrom; and
a reconstruction step of extracting encoded data received without a transmission error and a fault from the discriminated and separated encoded data, and reconstructing and outputting encoded data from the extracted encoded data.

37. The contents receiving method as claimed in claim 36, wherein, when reconstructing the encoded data, duplication of

the encoded data is judged from identifiers given to encoded data transmission units.

38. The contents receiving method as claimed in claim 36, wherein a compression rate and/or hierarchy of the encoded data is judged from at least one of:

- 5 a) an encoded data receiving session determined in advance;
- b) encoded data identifying information determined in advance, which is given to the encoded data transmission unit;
- c) an encoded data receiving session informed by call connection processing; and
- 10 e) the encoded data identifying information which is given to the encoded data transmission unit and informed by the call connection processing.

39. The contents receiving method as claimed in any one of claims 36 - 38, wherein a receiving state report is transmitted for informing condition of a transmission line.

40. The contents receiving method as claimed in any one of claims 36 - 39, wherein, in the receiving step, the encoded data is received by securing a buffer size determined by at least one of:

- (a) a receiving buffer size determined in advance;
- (b) a buffer size informed by call connection processing; and
- 10 (c) a buffer size calculated based on a contents distributing

rate and time-difference setting information, which is set in advance and/or informed by call connection.

41. A contents transmitting/receiving method, comprising the steps of:

an output step of outputting data encoded by hierarchical encoding;

5 a transmission step of transmitting at least a part of data of at least one layer among the data encoded by the hierarchical encoding;

a receiving step of receiving encoded data transmitted by a plurality of sessions;

10 a step of discriminating and separating individual encoded data units from the received encoded data; and

a reconstruction step of extracting encoded data received without a transmission error and a fault from the discriminated and separated encoded data, and reconstructing and outputting

15 the extracted encoded data.

42. A contents distribution program for allowing a computer that constitutes a contents distributing apparatus to execute:

a data processing function for outputting encoded data;

5 and

a transmission processing function for transmitting the

encoded data from the data section, wherein
data encoded by hierarchical encoding is outputted as the
encoded data through execution of the data processing function,
10 and

at least a part of data of at least one layer among the
data encoded by the hierarchical encoding is transmitted
through execution of the transmission processing function.

43. The contents distribution program as claimed in claim
42, wherein:

the data encoded by the hierarchical encoding is
separated to respective encoded data of each layer to be
5 outputted through execution of the data processing function;
and

each of the encoded data is transmitted individually by
each layer through execution of the transmission processing
function.

44. The contents distribution program as claimed in claim
42, comprising a function of transmitting at least a part of
referred-information encoded data of at least one layer among
the data encoded by the hierarchical encoding.

45. The contents distribution program as claimed in claim
42, comprising a function of transmitting, among the data

encoded by the hierarchical encoding: a) at least a part of
5 encoded data of a first layer; and b) at least a part of
referred-information encoded data of at least one layer among
remaining layers.

46. The contents distribution program as claimed in claim
42, comprising a function of transmitting, among the data
encoded by the hierarchical encoding: a) at least a part of
referred-information encoded data of a first layer; and b) at
5 least a part of encoded data of at least one layer among remaining
layers.

47. The contents distribution program as claimed in any
one of claims 42 - 46, comprising a function of controlling
quality and stability and/or confidentiality of distribution
contents on the contents distributing apparatus side through
5 controlling number of the encoded data to be transmitted,
hierarchy of the encoded data, distribution target of a cipher
key and/or encryption method and/or degree of encryption.

48. The contents distribution program as claimed in any
one of claims 42 - 47, wherein, when performing data
transmission of a plurality of pieces of encoded data with a
time difference provided therebetween, a compression rate of
5 following encoded data is changed with respect to a compression

rate of preceding encoded data with the time difference.

49. The contents distribution program as claimed in claim 49, comprising a function of selecting the compression rate in accordance with a distribution rate and/or condition of a transmission line.

50. The contents distribution program as claimed in any one of claims 42 - 49, comprising a function of performing data transmission including encoded data of layers higher than hierarchy of the data to be transmitted.

51. The contents distribution program as claimed in any one of claims 42 - 50, comprising a function of controlling the quality and stability of the distribution contents on a contents distributing side through controlling informing target of session information of a session by which the encoded data is transmitted.

52. A contents reception program for allowing a computer that constitutes a contents receiving apparatus to execute:

a reception processing function for receiving encoded data transmitted by a plurality of sessions;

5 a processing function for receiving the encoded data received in the receiving step, and discriminating and

separating individual encoded data units therefrom; and
a reconstruction processing function for extracting
encoded data received without a transmission error and a fault
10 from the discriminated and separated encoded data, and
reconstructing and outputting encoded data from the extracted
encoded data.

53. The contents reception program as claimed in claim
52, comprising a function of judging duplication of the encoded
data from identifiers given to encoded data transmission units
when reconstructing the encoded data.

54. The contents reception program as claimed in claim
52, comprising a function of judging a compression rate and/or
hierarchy of the encoded data from at least one of:
a) an encoded data receiving session determined in advance;
5 b) encoded data identifying information determined in advance,
which is given to the encoded data transmission unit;
c) an encoded data receiving session informed by call connection
processing; and
e) the encoded data identifying information which is given to
10 the encoded data transmission unit and informed by the call
connection processing.